

1        **In the Claims**

2        Claims 1-75 remain in the application and are listed below:

3  
4        1.        (Original) An editing system comprising:  
5        a switch assembly comprising one or more software-implemented matrix  
6        switches, individual matrix switches comprising:  
7        one or more input pins configured to receive a data stream; and  
8        one or more output pins configured to output a data stream;  
9        the one or more input pins being routable to the one or more output pins,  
10       the switch assembly being configured to process both compressed and  
11       uncompressed data streams to provide a compressed output data stream that  
12       represents a user-defined editing project.

13  
14       2.        (Original) The editing system of claim 1, wherein the switch  
15       assembly comprises multiple switches.

16  
17       3.        (Original) The editing system of claim 2, wherein one switch is  
18       configured to process compressed data streams.

19  
20       4.        (Original) The editing system of claim 2, wherein one switch is  
21       configured to process uncompressed data streams.

22  
23       5.        (Original) The editing system of claim 2, wherein one switch is  
24       configured to process compressed data streams, and one switch is configured to  
25       process uncompressed data streams.

1  
2 6. (Original) One or more computer-readable media having computer-  
3 readable instructions thereon which, when executed by a computer, provide the  
4 editing system of claim 1.

5  
6 7. (Original) The editing system of claim 1 configured as a multi-media  
7 editing system.

8  
9 8. (Original) An editing system comprising:  
10 a media processing object configured to:  
11 receive multiple data streams comprising compressed and  
12 uncompressed data streams; and  
13 process the one or more data streams to provide a compressed output  
14 data stream that represents a media project.

15  
16 9. (Original) The editing system of claim 8, wherein the media  
17 processing object comprises a software-implemented switch assembly.

18  
19 10. (Original) The editing system of claim 8, wherein the media  
20 processing object comprises a software-implemented switch assembly having  
21 multiple pins configured to receive or provide data streams.

22  
23 11. (Original) The editing system of claim 8, wherein the media  
24 processing object comprises multiple software-implemented switches each of  
25 which having one or more pins configured to receive or provide data streams.

1  
2 12. (Original) The editing system of claim 8, wherein the media project  
3 comprises a multi-media project.

4  
5 13. (Original) A multi-media editing system comprising:  
6 a switch assembly comprising one or more software-implemented matrix  
7 switches, individual matrix switches comprising:  
8 one or more input pins configured to receive a data stream; and  
9 one or more output pins configured to output a data stream;  
10 the one or more input pins being routable to the one or more output pins,  
11 the switch assembly being configured to process both compressed and  
12 uncompressed data streams to provide a compressed output data stream that  
13 represents a user-defined multi-media editing project; and  
14 one or more data structures associated with the switch assembly and  
15 configured for use in programming the switch assembly to provide a routing  
16 scheme for routing input pins to output pins for a given multi-media editing  
17 project time line.

18  
19 14. (Original) The multi-media editing system of claim 13, wherein the  
20 one or more data structures comprise one or more grid structures, individual grid  
21 structures being configured to contain data that defines an association between  
22 input and output pins for the project time line.

23  
24 15. (Original) The multi-media editing system of claim 13, wherein the  
25 switch assembly comprises multiple switches.

1  
2 16. (Original) The multi-media editing system of claim 15, wherein the  
3 one or more data structures comprise a data structure associated with at least some  
4 of the multiple switches.

5  
6 17. (Original) The multi-media editing system of claim 16, wherein the  
7 data structures comprise grid structures that contain data that defines an  
8 association between input and output pins for the project time line.

9  
10 18. (Original) The multi-media editing system of claim 15, wherein one  
11 switch is configured to process compressed data streams, and another switch is  
12 configured to process uncompressed data streams.

13  
14 19. (Original) The multi-media editing system of claim 18, wherein the  
15 one or more data structures comprise data structures associated with the switches  
16 that are configured to process the compressed and uncompressed data streams.

17  
18 20. (Original) The multi-media editing system of claim 19, wherein the  
19 data structures comprise grid structures that contain data that defines an  
20 association between each switch's input and output pins for the project time line.

21  
22 21. (Original) A multi-media editing system comprising:  
23 a switch assembly comprising one or more non-hardware matrix switches,  
24 individual matrix switches comprising:  
25 one or more input pins configured to receive a data stream; and

1       one or more output pins configured to output a data stream;  
2       the one or more input pins being routable to the one or more output pins,  
3       the switch assembly being configured to process both compressed and  
4       uncompressed data streams to provide a compressed output data stream that  
5       represents a user-defined multi-media editing project.

6  
7       22.     (Original) The multi-media editing system of claim 21, wherein the  
8       switch assembly comprises multiple switches.

9  
10       23.    (Original) The multi-media editing system of claim 22, wherein one  
11       switch is configured to process compressed data streams.

12  
13       24.    (Original) The multi-media editing system of claim 22, wherein one  
14       switch is configured to process uncompressed data streams.

15  
16       25.    (Original) The multi-media editing system of claim 22, wherein one  
17       switch is configured to process compressed data streams, and another switch is  
18       configured to process uncompressed data streams.

19  
20       26.    (Original) The multi-media editing system of claim 21 further  
21       comprising one or more data structures associated with the switch assembly and  
22       configured for use in programming the switch assembly to provide a routing  
23       scheme for routing input pins to output pins for a given multi-media editing  
24       project time line.

1           27.    (Original) The multi-media editing system of claim 26, wherein the  
2 one or more data structures comprise grid structures that contain data that defines  
3 an association between input and output pins for the project time line.  
4

5           28.    (Original) An media processing system comprising:  
6           switch means for receiving compressed and uncompressed data streams  
7 associated with sources that are to be incorporated into a project and processing  
8 the compressed and uncompressed data streams to provide a single compressed  
9 output stream that represents the project; and  
10          programming means associated with the switch means and configured to  
11 program the switch means to provide the single compressed output stream.  
12

13          29.    (Original) The multi-media editing system of claim 28, wherein the  
14 switch means comprises:

15          first switch means for processing the uncompressed data stream to provide  
16 an output uncompressed data stream;

17          second switch means for processing the compressed data stream to provide  
18 an output compressed data stream; and

19          third switch means for processing the output uncompressed and compressed  
20 data streams to provide the single compressed output stream.  
21

22          30.    (Original) The multi-media editing system of claim 28, wherein the  
23 switch means comprises means for providing a data stream as a feedback data  
24 stream that is processed by the switch means.  
25

1           31.    (Original) The multi-media editing system of claim 28, wherein the  
2 switch means comprises switch means implemented in software.

3  
4           32.    (Original) The multi-media editing system of claim 28, wherein the  
5 switch means comprises:

6               first software switch means for processing the uncompressed data stream to  
7 provide an output uncompressed data stream;

8               second software switch means for processing the compressed data stream to  
9 provide an output compressed data stream; and

10              third software switch means for processing the output uncompressed and  
11 compressed data streams to provide the single compressed output stream.

12  
13           33.    (Original) A multi-media editing system comprising:

14               a first software-implemented matrix switch comprising one or more input  
15 pins and one or more output pins, the one or more input pins being routable to the  
16 one or more output pins, the first matrix switch being configured to process one or  
17 more uncompressed data streams and output an uncompressed data stream;

18               a second software-implemented matrix switch comprising one or more  
19 input pins and one or more output pins, the one or more input pins being routable  
20 to the one or more output pins, the second matrix switch being configured to  
21 process one or more compressed data streams and output a compressed data  
22 stream; and

23               a third software-implemented matrix switch comprising multiple input pins  
24 and multiple output pins, the input pins being routable to one or more output pins,  
25 the third matrix switch being configured to receive an uncompressed data stream

1 from the first switch and a compressed data stream from the second switch and  
2 process the received data streams to provide a single compressed output data  
3 stream that represents a user-defined multi-media editing project.

4  
5 34. (Original) The multi-media editing system of claim 33 further  
6 comprising a software-implemented compressor element coupled with the third  
7 switch and configured to receive and compress an uncompressed data stream.

8  
9 35. (Original) The multi-media editing system of claim 34 further  
10 comprising a feedback path between the compressor element and an input pin of  
11 the third switch configured to provide a compressed data stream to the third  
12 switch's input pin.

13  
14 36. (Original) The multi-media editing system of claim 33, wherein the  
15 third switch is programmed to receive, when available, a data stream from the  
16 second switch and, when a data stream is unavailable from the second switch, seek  
17 a data stream from the first switch.

18  
19 37. (Original) One or more computer-readable having computer-  
20 readable instructions thereon which, when executed by a computer, provide the  
21 multi-media editing system of claim 33.

22  
23 38. (Original) A multi-media editing system comprising:  
24 first software switch means for processing one or more uncompressed data  
25 streams to provide an uncompressed data stream, the switch means comprising at



1 least one feedback loop that modifies a data stream that is output by the switch  
2 means and provides the modified data stream as an input to the switch means;

3 second software switch means for processing one or more compressed data  
4 streams to provide a compressed data stream; and

5 a third software switch means for receiving an uncompressed data stream  
6 from the first software switch means and a compressed data stream from the  
7 second software switch and processing the received data streams to provide a  
8 single compressed output data stream that represents a user-defined multi-media  
9 editing project.

10  
11 39. (Original) The multi-media editing system of claim 38 further  
12 comprising programming means associated with the first and second software  
13 switch means for programming routing of data streams therethrough.

14  
15 40. (Original) A multi-media editing system comprising:

16 a first software-implemented matrix switch comprising one or more input  
17 pins and one or more output pins, the one or more input pins being routable to the  
18 one or more output pins, the first matrix switch being configured to process one or  
19 more uncompressed data streams and output an uncompressed data stream;

20 a second software-implemented matrix switch comprising one or more  
21 input pins and one or more output pins, the one or more input pins being routable  
22 to the one or more output pins, the second matrix switch being configured to  
23 process one or more compressed data streams and output a compressed data  
24 stream;

1 a third software-implemented matrix switch comprising multiple input pins  
2 and multiple output pins, the input pins being routable to one or more output pins,  
3 the third matrix switch being configured to receive an uncompressed data stream  
4 from the first switch and a compressed data stream from the second switch and  
5 process the received data streams to provide a single compressed output data  
6 stream that represents a user-defined multi-media editing project; and

7 one or more data structures associated with at least some of the matrix  
8 switches and configured for use in programming the associated switches to  
9 provide a routing scheme for routing input pins to output pins.

10  
11 41. (Original) The multi-media editing system of claim 40, wherein the  
12 one or more data structures comprise one or more grid structures that contain data  
13 that defines an association between input and output pins for a project time line.

14  
15 42. (Original) The multi-media editing system of claim 40, wherein the  
16 one or more data structures comprise multiple data structures, individual data  
17 structures being associated with the first and second switches.

18  
19 43. (Original) The multi-media editing system of claim 42, wherein the  
20 data structures comprise grid structures each of which contains data that defines an  
21 association between input and output pins of its associated switch for a project  
22 time line.

23  
24 44. (Original) A multi-media editing method comprising:  
25

1 providing a switch assembly comprising one or more software-  
2 implemented matrix switches, individual matrix switches comprising one or more  
3 input pins and one or more output pins, the one or more input pins being routable  
4 to the one or more output pins, the switch assembly being configured to process  
5 both compressed and uncompressed data streams to provide a compressed output  
6 data stream that represents a user-defined multi-media editing project; and

7 programming the switch assembly using one or more data structures, said  
8 programming providing a routing scheme for routing input pins to output pins for  
9 a given time period.

10  
11 45. (Original) The multi-media editing method of claim 44, wherein said  
12 providing comprises providing multiple switches at least one of which being  
13 configured to process both compressed and uncompressed data streams.

14  
15 46. (Original) The multi-media editing method of claim 44, wherein said  
16 providing comprises providing multiple switches, one of which being configured  
17 to process only compressed data streams.

18  
19 47. (Original) The multi-media editing method of claim 44, wherein said  
20 providing comprises providing multiple switches, one of which being configured  
21 to process only uncompressed data streams.

22  
23 48. (Original) The multi-media editing method of claim 44, wherein said  
24 providing comprises providing multiple switches:  
25

1 at least one of which being configured to process both compressed and  
2 uncompressed data streams;

3 at least one of which being configured to process only compressed data  
4 streams; and

5 at least one of which being configured to process only uncompressed data  
6 streams.

7  
8 49. (Original) The multi-media editing method of claim 44, wherein said  
9 programming comprises programming the switch assembly using one or more grid  
10 structures, individual grid structures containing data defining an association  
11 between input pins, output pins, and a project time line.

12  
13 50. (Original) The multi-media editing method of claim 44 further  
14 comprising:

15 representing the editing project as a hierarchical tree structure; and

16 processing the hierarchical tree structure to provide at least one grid  
17 structure containing data that defines an association between input pins, output  
18 pins and a time line defined by the editing project.

19  
20 51. (Original) The multi-media editing method of claim 44, wherein said  
21 programming comprises:

22 defining a first grid structure containing data that defines an association  
23 between input pins, at least one output pin and a time line defined by the editing  
24 project; and  
25

1 defining a second grid structure containing data that defines an association  
2 between different input pins, at least one different output pin and the time line  
3 defined by the editing project.  
4

5 52. (Original) The multi-media editing method of claim 51, wherein the  
6 first grid structure is associated with programming the switch assembly to process  
7 the uncompressed data stream.  
8

9 53. (Original) The multi-media editing method of claim 51, wherein the  
10 second grid structure is associated with programming the switch assembly to  
11 process the compressed data stream.  
12

13 54. (Original) The multi-media editing method of claim 51, wherein said  
14 defining of the second grid structure comprises deriving the second grid structure  
15 from the first grid structure.  
16

17 55. (Original) One or more computer-readable media having computer-  
18 readable instructions thereon which, when executed by a computer, implement the  
19 method of claim 44.  
20

21 56. (Original) A multi-media editing application executable on one or  
22 more computers to implement the method of claim 44.  
23  
24  
25

1           57. (Original) One or more computer-readable media having computer-  
2 readable instructions thereon which, when executed by a computer, cause the  
3 computer to:

4           provide a switch assembly comprising multiple software-implemented  
5 matrix switches, individual matrix switches comprising one or more input pins and  
6 one or more output pins, the one or more input pins being routable to the one or  
7 more output pins, the switch assembly comprising:

8           a first switch configured to process uncompressed data streams to provide  
9 an uncompressed output data stream;

10          a second switch configured to process compressed data streams to provide a  
11 compressed output data stream; and

12          a third switch configured to receive both the uncompressed and compressed  
13 output data streams and process the data streams to provide a compressed output  
14 data stream that represents a user-defined multi-media editing project; and

15          program the switch assembly by defining a first grid structure containing  
16 data that defines an association between the first switch's input pins, at least one  
17 output pin and a time line defined by the editing project, and defining a second  
18 grid structure containing data that defines an association between the second  
19 switch's input pins, at least one output pin and the time line defined by the editing  
20 project.

21  
22          58. (Original) The computer-readable media of claim 57, wherein the  
23 instructions cause the computer to derive the second grid structure from the first  
24 grid structure.  
25

1           59.   (Original) The computer-readable media of claim 58, wherein the  
2 instructions cause the computer to derive the second grid structure by:

3           determining whether any entries in the second grid structure are associated  
4 with a data stream source that is not in a format that is the same as or compatible  
5 with a format associated with the compressed output data stream that represents a  
6 user-defined multi-media editing project; and

7           removing any entry that is not in the same or compatible format.

8  
9           60.   (Original) The computer-readable media of claim 59, wherein said  
10 format is associated with a frame rate.

11  
12           61.   (Original) The computer-readable media of claim 59, wherein said  
13 format is associated with a data rate.

14  
15           62.   (Original) The computer-readable media of claim 58, wherein the  
16 instructions cause the computer to derive the second grid structure by:

17           copying the first grid structure;

18           evaluating the copied grid structure to ascertain entries associated with data  
19 source streams that are modified in some way; and

20           removing any grid entries associated with data source streams that are  
21 modified in some way.

22  
23           63.   (Original) A multi-media editing method comprising:

24           providing a first software-implemented matrix switch comprising one or  
25 more input pins and one or more output pins, the one or more input pins being

1 routable to the one or more output pins, the first matrix switch being configured to  
2 process one or more uncompressed data streams and output an uncompressed data  
3 stream;

4 providing a second software-implemented matrix switch comprising one or  
5 more input pins and one or more output pins, the one or more input pins being  
6 routable to the one or more output pins, the second matrix switch being configured  
7 to process one or more compressed data streams and output a compressed data  
8 stream;

9 providing a third software-implemented matrix switch comprising multiple  
10 input pins and multiple output pins, the input pins being routable to one or more  
11 output pins;

12 receiving, with the third matrix switch, an uncompressed data stream from  
13 the first switch and a compressed data stream from the second switch; and

14 processing the received data streams with the third switch to provide a  
15 single compressed output data stream that represents a user-defined multi-media  
16 editing project.

17  
18 64. (Original) The multi-media editing method of claim 63, wherein said  
19 processing comprises:

20 compressing the uncompressed data stream received from the first switch  
21 using a software-implemented compressor element coupled with the third switch;  
22 and

23 routing the compressed data stream that was compressed by the compressor  
24 element to an input pin of the third switch.

25



1           65.   (Original) The multi-media editing method of claim 63 further  
2 comprising receiving with the third switch, when available, a data stream from the  
3 second switch and, when a data stream is unavailable from the second switch,  
4 seeking with the third switch, a data stream from the first switch.

5  
6           66.   (Original) One or more computer-readable media having computer-  
7 readable instructions thereon which, when executed by a computer, implement the  
8 method of claim 63.

9  
10          67.   (Original) One or more computer-readable media having computer-  
11 readable instructions thereon which, when executed by a computer, cause the  
12 computer to:

13           process at least one compressed data stream to provide an output  
14 compressed data stream that comprises a portion of a user-defined multi-media  
15 editing project that is associated with a data stream source;

16           process one or more uncompressed data streams to manipulate the one or  
17 more uncompressed data streams to provide an output uncompressed data stream  
18 that comprises a different portion of a user-defined multi-media editing project  
19 that is associated with one or more data stream sources;

20           compress the output uncompressed data stream; and

21           associate the output compressed data stream and the compressed output  
22 uncompressed data stream together to provide a compressed stream that represents  
23 a user-defined multi-media editing project.

1           68.    (Original) The computer-readable media of claim 67, wherein the  
2 instructions cause the computer to provide a software-implemented matrix switch  
3 that associates the data streams to provide the user-defined multi-media editing  
4 project.

5  
6           69.    (Original) The computer-readable media of claim 67, wherein the  
7 instructions cause the computer to provide a software-implemented matrix switch  
8 that associates the data streams to provide the user-defined multi-media editing  
9 project, the software-implemented matrix switch being configured to receive the  
10 output compressed data stream when it is available, and seek the output  
11 uncompressed data stream when the output compressed data stream is unavailable.

12  
13           70.    (Original) One or more computer-readable media having computer-  
14 readable instructions thereon which, when executed by a computer, cause the  
15 computer to:

16           receive and process one or more uncompressed data streams with a first  
17 software-implemented matrix switch comprising one or more input pins and one  
18 or more output pins, the one or more input pins being routable to the one or more  
19 output pins to output an uncompressed data stream;

20           receive and process one or more compressed data streams with a second  
21 software-implemented matrix switch comprising one or more input pins and one  
22 or more output pins, the one or more input pins being routable to the one or more  
23 output pins to output a compressed data stream;

24           receive and process the uncompressed data stream that is output by the first  
25 switch and the compressed data stream that is output by the second switch with a

1 third software-implemented matrix switch comprising multiple input pins  
2 individual ones of which receive data streams, and one or more output pins  
3 individual ones of which provide data streams, the one or more input pins being  
4 routable to the one or more output pins to output, at one output pin, a compressed  
5 data stream that represents a user-defined multi-media editing project.

6  
7 71. (Original) The computer-readable media of claim 70, wherein the  
8 instructions cause the computer to:

9 compress the uncompressed data stream output by the first switch using the  
10 third switch; and

11 incorporate the compressed uncompressed data stream with the compressed  
12 data stream that is output by the second switch to provide the compressed data  
13 stream that represents the user-defined editing project.

14  
15 72. (Original) The computer-readable media of claim 70, wherein the  
16 instructions cause the computer to program the first and second switches using  
17 first and second data structures respectively associated with the first and second  
18 switches, each data structure providing a routing scheme for routing switch input  
19 pins to switch output pins.

20  
21 73. (Original) The computer-readable media of claim 72, wherein the  
22 first and second data structures comprise grid structures that provide an  
23 association between input pins, output pins and a time line defined by a user-  
24 defined multi-media editing project.

1           74.    (Original) The computer-readable media of claim 73, wherein the  
2 instructions cause the computer to derive the second grid structure from the first  
3 grid structure.

4  
5           75.    (Original) The computer-readable media of claim 74, wherein the  
6 instructions cause the computer to derive the second grid structure by:

7           copying the first grid structure;

8           evaluating the copied grid structure to ascertain entries associated with data  
9 source streams that are modified in some way; and

10          removing any grid entries associated with data source streams that are  
11 modified in some way.